



Albendazole Resistant Neurocysticercosis- Rare Unusual Case Report

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ABSTRACT

A 25 years old female patient presented with history of recurrent seizures since 2 years. Patient was diagnosed as a case of Neurocysticercosis based on Magnetic resonant imaging (MRI) of brain finding in January 2015 for which she was given a course of Albendazole, Prednisolone and antiepileptic medications. During the following 2 year period, patient developed recurrent seizures and abnormal behavior for which patient was investigated and new neurocysticercosis lesions were found in MRI Brain despite previous complete antiparasitic treatment and adherence to diet and antiepileptic medication. Patient had received courses of Albendazole (4 times) with combination of Ivermectin (1 time), and with course of Praziquantel (1 time). So we are reporting this rare case of neurocysticercosis resistant to conventional, routinely used antihelminthic medications.

Key Words: Neurocysticercosis, Albendazole resistance, Praziquantel, Seizure, Antihelminthic

INTRODUCTION

Cysticercosis caused by larval stage of the tapeworm *Taenia solium*, is a major public health problem, both in resource-poor as well as western developed countries. It is the single most common cause of epilepsy in the resource-poor endemic regions of the world including most of South and Central America, India, South-east Asia, China and sub-Saharan Africa^{1,2}. Humans are only definitive host of *Taenia solium* harboring the adult tapeworm in the intestine. Both humans and pigs act as intermediate hosts and harbour *Taenia solium* larvae in different internal organs including the brain. Humans and pigs acquire cysticercosis through ingestion of eggs excreted in faeces of human carriers. *Taenia solium* infection is also being increasingly diagnosed in western, affluent countries because of human migration from, and travel to endemic areas. It is common in communities where pigs roam freely and people consume undercooked pork³. Neurocysticercosis is central nervous system (CNS) infection with *Taenia solium*. It is perhaps the commonest parasitic infestation

of the CNS, and has received attention in the last two decades because of the availability of MRI and CT scanning in the countries where cysticercosis is endemic.

CASE HISTORY

25 years old, 54 kg, female presented with history of focal seizures in January 2015. Patient had no any other history like fever, head trauma, chronic cough, Tuberculosis. Patient had history of recent first trimester abortion. Past and Family history were not significant. Patient was mixed by diet eating non-vegetarian diet most of the days in month and had poor hygiene. On examination, patient had unremarkable general and systemic examinations except Fundus showing bilateral papilloedema. Patient's routine investigations were also within normal limit including blood sugar and serum electrolytes. Stool examination for ova and cyst was negative. *T. solium* antibody test was positive. Chest X-ray was normal. Muntax test was negative. HIV and VDRL were non

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reactive. MRI Brain suggestive of disseminated numerous subcentimeter sizes cystic lesions in bilateral cerebral hemisphere, cerebellar hemisphere, basal ganglia and midbrain with eccentric scolex. Most lesions showing perilesional edema and few lesions showing ring enhancement on post contrast study. Few lesions were calcified. These findings were suggestive of various stages of neurocysticercosis. So we gave to patient a course of Tab Albendazole 400mg BID for 4 weeks with Tab Prednisolone 40mg daily with tapering doses and antiepileptic medication (first course).

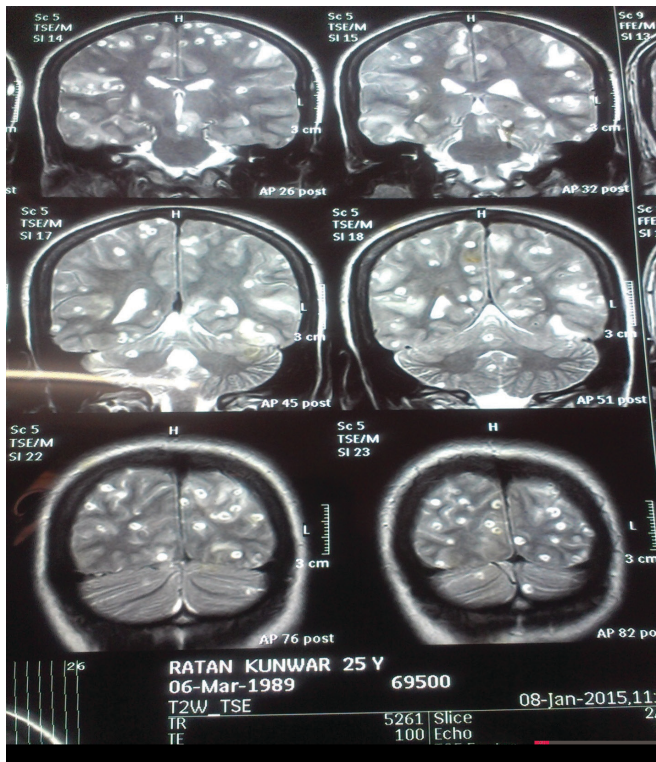


Figure 1: MRI Brain suggestive of disseminated numerous subcentimeter sizes cystic lesions in bilateral cerebral hemisphere, cerebellar hemisphere, basal ganglia and midbrain with eccentric scolex suggestive of Neurocysticercosis.

This patient again developed focal seizures in July 2015. Patient's adherence about diet and medication was checked to which she was properly adhered. MRI Brain was again done which was suggestive of various stages of neurocysticercosis. So we again gave Tab Albendazole 400mg BID for 4 weeks under cover of steroid to the patient (second course).

In September_2016, this patient again developed headache and altered behavior. Patient's MRI Brain showed various stages of neurocysticercosis. So patient was given a course of Tab Albendazole 400mg BID for 4 weeks with Tab Ivermectin 12mg daily for 15 days (third course).

Again in February 2017, patient presented with parosmia, abnormal behavior and focal seizure. Repeated MRI Brain showed various stages of neurocysticercosis with colloid

vesicular stage with perilesional vasogenic edema in right frontotemporal and parietal region. Extraocular muscles were spared. We planned biopsy of brain lesion to rule out Tubercular granuloma but patient did not give consent for the same. As patient had active neurocysticercosis, patient was given a course of Tab. Praziquantel 900mg. TID (50mg/kg body weight / day) with Tab Albendazole 400mg BID for 4 weeks (fourth course). Anti-epileptic drug was continued. On may 2017, patient came back for follow up, she was asymptomatic, MRI brain revealed clearance of almost all neurocysticercosis lesions and patient desire to stop all the drugs for future. Now she is living seizure free life without any medications.

DISCUSSION

Despite receiving proper antihelminthic treatment, patient had persistent symptoms and lesions of neurocysticercosis in brain. This is a rare case of albendazole resistant neurocysticercosis

This patient has fulfilled the diagnostic criteria for human cysticercosis. Presence of 1 absolute criterion out of 3 is required for a definitive diagnosis as proposed by Del Brutto et al⁴ i.e. Cystic lesions containing the characteristic scolex on CT or MRI Brain. Other 2 absolute criteria are demonstration of cysticerci by histologic or microscopic examination of biopsy material, and visualization of the parasite in the eye by fundoscopic examination. These other 2 criteria were not met in our patient.

CONCLUSION

Neurocysticercosis is one of the common helminthic condition of the brain presented with seizure. And Albendazole is used as a drug for neurocysticercosis world wide particularly in developing countries. Although resistance of cysticercosis to Albendazole in humans has been reported in literature very rarely it may occur though⁵. So this case is most unusual.

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